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P.O. BOX 70250			WONG, BLANCHE	
OAKLAND, CA 94612-0250				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/600,893

Applicant(s)

SOMASUNDARAM, MAHADEV

Examiner

Blanche Wong

Art Unit

2619

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-16, 19-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-16, 19-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-8,10-16,18-24 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the method including "maintaining a plurality of routing tables ...", "receiving a packet ...", "receiving a default route ..." and "updating each of the plurality of routing tables to include the default route ..." (all in claims 1,12,14,22,23,24) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Objections

3. Claims 1-8,10-16,18-24 are objected to because of the following informalities:

With regard to claims 1-8,10-16,18-24, Examiner suggests spelling out abbreviations, such as NAT, MPLS, etc. when they are used for the first time.

With regard to claims 1,12,14,22-24, Examiner suggests replacing "a different one of a plurality of virtual private networks" in line 4 with "each of a plurality of virtual private networks" in consistent with claim language such as "each of a plurality of virtual private networks" in lines 15-16.

With regard to claim 2, Examiner suggests replacing "the virtual private networks" in lines 1-2 with "the plurality of virtual private networks" in consistent with "a plurality of virtual private networks" in claim 1, line 4.

With regard to claim 8, Examiner suggests replacing "the virtual private networks" in line 2 with "the plurality of virtual private networks" in consistent with "a plurality of virtual private networks" in claim 7, line 4.

With regard to claim 10, Examiner suggests replacing "the routing tables" in line 14 with "the plurality of routing tables" in consistent with "a plurality of routing tables" in line 3.

With regard to claim 13, Examiner suggests replacing "the routing tables in line 2 and in line 3 with "the plurality of routing tables" in consistent with "a plurality of routing tables" in claim 12, line 3.

With regard to claim 14, Examiner suggests replacing "the sets of routing information" in line 10 with "the plurality of sets of routing information" in consistent with "a plurality of sets of routing information" in line 3.

With regard to claim 15, Examiner suggests replacing "the sets of routing information" in lines 1-2 with "the plurality of sets of routing information" in consistent with "a plurality of sets of routing information" in claim 14, line 3.

With regard to claim 16, Examiner suggests replacing "the sets of routing information" in lines 1-2 with "the plurality of sets of routing information" in consistent with "a plurality of sets of routing information" in claim 14, line 3.

With regard to claim 19, Examiner suggests replacing "the virtual private networks" in lines 2-3 with "the plurality of virtual private networks" in consistent with "a plurality of virtual private network" in claim 14, line 4.

With regard to claim 21, Examiner suggests replacing "the virtual private networks" in line 4 with "the plurality of virtual private networks" in consistent with "a plurality of virtual private network" in claim 14, line 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1-8,10-16,18-24** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, it is unclear whether the identified routing table of "identifying one of the plurality of routing tables to route the packet" in line 9 is the same as the routing table that is included in the "information indicating one of the plurality of routing tables to route the packet" in the packet in lines 6-7. If so, is "identifying one of the plurality of routing tables to route the packet" using "information indicating one of the plurality of routing tables to route the packet" in the packet in lines 6-7?

With regard to claim 1, it is unclear whether "the one of the plurality of routing tables" in line 10 is the identified routing table in line 9.

With regard to claim 1, it is unclear how "a default route to a network device" in line 13 can be advertised by itself in "the default route being advertised by the network device" in line 14.

With regard to claim 1, it is unclear whether "updating each of the plurality of routing tables to include the default route to the network device providing one or more shared services available to each of the plurality of virtual private networks" in lines 17-19 is the same as "updating each of the plurality of routing tables to include the default route" because the extended limitations is already stated in lines 13-16.

With regard to claim 10, it is unclear whether "the virtual private network" in lines 18-19 is the same as "the virtual private network" in line 17.

With regard to claim 12, it is unclear whether the identified routing table of "identifying one of the plurality of routing tables to route the packet" in line 9 is the same as the routing table that is included in the "information indicating one of the plurality of routing tables to route the packet" in the packet in lines 6-7. If so, is "identifying one of the plurality of routing tables to route the packet" using "information indicating one of the plurality of routing tables to route the packet" in the packet in lines 6-7?

With regard to claim 12, it is unclear whether "the one of the plurality of routing tables" in line 10 is the identified routing table in line 9.

With regard to claim 12, it is unclear whether "the packet [that] includes an MPLS tag" in line 13 is the same as "the packet [that includes] information indicating one of the plurality of routing tables" in lines 6-7.

With regard to claim 12, it is unclear whether "the virtual private network" in lines 17-18 is the same as "the virtual private network from the MPLS tag" in line 15.

With regard to claim 14, it is unclear whether the identified routing table of "identifying one of the plurality of routing tables to route the packet" in line 9 is the same as the routing table that is included in the "information indicating one of the plurality of routing tables to route the packet" in the packet in lines 6-7. If so, is "identifying one of the plurality of routing tables to route the packet" using "information indicating one of the plurality of routing tables to route the packet" in the packet in lines 6-7?

With regard to claim 14, it is unclear whether "the one of the plurality of routing tables" in line 10 is the identified routing table in line 9.

With regard to claim 14, it is unclear how "a default route to a network device" in line 13 can be advertised by itself in "the default route being advertised by the network device" in line 14.

With regard to claim 14, it is unclear whether "updating each of the plurality of routing tables to include the default route to the network device providing one or more shared services available to each of the plurality of virtual private networks" in lines 17-19 is the same as "updating each of the plurality of routing tables to include the default route" because the extended limitations is already stated in lines 13-16.

With regard to claims 22-24, similar rejections to claims 1 and 14.

6. **Claims 1,14,22-24** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: shared services and virtual private networks.

With regard to claims 1 and 14, it is unclear how "each of the shared services is [made] available to each of the plurality of virtual private networks" in lines 15-16 if the shared services is provided by a/the network device in line 13. Are the shared services being advertised with the default route.

With regard to claims 22-24, similar rejections to claims 1 and 14.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claim 22** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specification, p.19, discloses "the invention may also be embodied in a carrier wave" and thus, making "the computer readable medium a non-statutory subject matter.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1,2,6-8,14-16,18,20,21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Pat No. 6,928,082) in view of Prince (U.S. Pat No. 5,852,606).

With regard to claim 1, Liu discloses

maintaining a plurality of routing tables (**NAT 26a,26b in Fig. 1**), each of the plurality of routing tables being associated with each of a plurality of virtual private networks (**private networks 24a,24b in Fig. 1**);

receiving a packet, the packet including an IP source address (**IP address of source device**) and an IP destination address (**IP address of destination device**) (**"Frames of data are communicated between the various devices utilizing each device IP address for routing the frames from a source device to a destination device", col. 5, lines 64-col. 6, line 1**), the packet further including information indicating one of the plurality of routing tables to route the packet (**the destination address within the private network**) (**"IP frames on the private network 24 are routed to the appropriate device on private network 24 when the destination**

address is within the block of private network IP addresses. ... the IP frame on the private network 24 is routed to the NAT server 26", col. 7, lines 34-39);

performing NAT on the packet (routed to the NAT server) ("IP frames on the private network 24 are routed to the appropriate device on private network 24 when the destination address is within the block of private network IP addresses. ... the IP frame on the private network 24 is routed to the NAT server 26", col. 7, lines 34-39);

identifying one of the plurality of routing tables to route the packet ("NAT server maintains a translation table 30", col. 7, line 61);

identifying an entry in the one of the plurality of routing tables using the IP destination address ("the NAT server 26 will locate the one of the entries 32a-32f to which the frame corresponds utilizing the frames destination IP address ...", col. 8, lines 22-24);

routing the packet using the identified routing table entry ("IP frames on the private network 24 are routed to the appropriate device on private network 24 when the destination address is within the block of private network IP addresses. ... the IP frame on the private network 24 is routed to the NAT server 26", col. 7, lines 34-39); and

receiving a default route to a network device providing one or more shared services, the default route being advertised by the network device, wherein each of the one or more shared services is available to each of the plurality of virtual private networks ("establishing a call signaling connection between the first telephony

client located on a private network and the second telephone client on the Internet", col. 2, lines 37-40).

Prince discloses updating each of the plurality of routing tables to include the default route **(updating translation table to provide for new virtual path/virtual circuits, col. 6, lines 6-10).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine updating each of the plurality of routing tables to include the default route as taught in Palnati with Liu in order to provide for call set-up and call tear-down ("This process may be referred to as call set-up and call tear-down", Palnati, col. 6, lines 10-11) and to provide for a clean and efficient translation table.

With regard to claim 2, Liu further discloses each of the plurality of virtual private networks is associated with a different customer **(P.N. Client 28 in Fig. 1).**

With regard to claim 6, Liu further discloses translating the IP source address **(NAT 26a,26b in Fig. 1)** from a private address **(first telephony client located on a private network)** to a public address **(second telephone client on the Internet)** when packet **(call signaling connection)** is received from a network device in a private network **(first telephony client located on a private network)** **("establishing a call signaling connection between the first telephony client located on a private network and the second telephone client on the Internet", col. 2, lines 37-40).**

With regard to claim 7, Liu further discloses translating the IP source address (**NAT 26a,26b in Fig. 1**) from a public address (**second telephone client on the Internet**) to a private address (**first telephony client located on a private network**) when packet (**call signaling connection**) is received from a network device in a public network (**second telephony client located on the Internet**) ("**establishing a call signaling connection between the first telephony client located on a private network and the second telephone client on the Internet**", col. 2, lines 37-40).

With regard to claim 8, Liu further discloses the network device in the public network provides one or more services (**call signaling**) to each of the plurality of virtual private networks ("**establishing a call signaling connection between the first telephony client located on a private network and the second telephone client on the Internet**", col. 2, lines 37-40).

With regard to claim 14, Liu discloses
maintaining a plurality of sets of routing information (**NAT 26a,26b in Fig. 1**),
each of sets of routing information being associated with each of a plurality of virtual private networks (**private networks 24a,24b in Fig. 1**);
receiving a packet, the packet including an IP source address (**IP address of source device**) and an IP destination address (**IP address of destination device**)
("**Frames of data are communicated between the various devices utilizing each**

device IP address for routing the frames from a source device to a destination device", col. 5, lines 64-col. 6, line 1), the packet further including information indicating one of the plurality of routing tables to route the packet **(the destination address within the private network)** ("IP frames on the private network 24 are routed to the appropriate device on private network 24 when the destination address is within the block of private network IP addresses. ... the IP frame on the private network 24 is routed to the NAT server 26", col. 7, lines 34-39);

performing NAT on the packet **(routed to the NAT server)** ("IP frames on the private network 24 are routed to the appropriate device on private network 24 when the destination address is within the block of private network IP addresses. ... the IP frame on the private network 24 is routed to the NAT server 26", col. 7, lines 34-39);

identifying one of the plurality of routing tables to route the packet **("NAT server maintains a translation table 30"**, col. 7, line 61);

identifying an entry in the one of the plurality of sets of routing information using the IP destination address **("the NAT server 26 will locate the one of the entries 32a-32f to which the frame corresponds utilizing the frames destination IP address ..."**, col. 8, lines 22-24);

routing the packet using the identified routing table entry **("IP frames on the private network 24 are routed to the appropriate device on private network 24 when the destination address is within the block of private network IP addresses.**

... the IP frame on the private network 24 is routed to the NAT server 26", col. 7, lines 34-39); and

receiving a default route to a network device providing one or more shared services, the default route being advertised by the network device, wherein each of the one or more shared services is available to each of the plurality of virtual private networks (**"establishing a call signaling connection between the first telephony client located on a private network and the second telephone client on the Internet", col. 2, lines 37-40).**

Prince discloses updating the one or more routing tables associated with the plurality of virtual private network to include the default route to the network device providing one or more shared services available to each of the plurality of virtual private networks (**updating translation table to provide for new virtual path/virtual circuits, col. 6, lines 6-10).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine updating the one or more routing tables associated with the plurality of virtual private network to include the default route to the network device providing one or more shared services available to each of the plurality of virtual private networks as taught in Palnati with Liu in order to provide for call set-up and call tear-down ("This process may be referred to as call set-up and call tear-down", Palnati, col. 6, lines 10-11) and to provide for a clean and efficient translation table.

With regard to claim 15, Liu further discloses a separate routing table **(NAT 26a,26b in Fig. 1)**.

With regard to claim 16, the combination of Liu and Prince discloses the method as recited in claim 14.

Prince further discloses VPN identifiers **(VPI/VCI, col. 6, line 112)**.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine VPN identifiers as taught in Prince with Liu to provide for virtual paths/virtual circuits.

With regard to claim 18, Liu further discloses updating a single routing tables to include the default route **(updating translation table to provide for new virtual path/virtual circuits, col. 6, lines 6-10)**.

With regard to claim 20, Liu further discloses the single routing table stores the plurality of sets of routing information **(translation table) ("NAT server maintains a translation table 30", col. 7, line 61)**.

With regard to claim 21, Liu further discloses updating each of the plurality of routing tables to include the default route **(updating translation table to provide for new virtual path/virtual circuits, col. 6, lines 6-10)**.

11. **Claims 3-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu and Prince as applied to claim 1 above, and further in view of Palnati et al. (U.S. Pat No. 5,991,297).

With regard to claim 3, the combination of Liu and Prince discloses the method of claim 1.

Palnati discloses the network device is associated with an ingress interface **(ingress) (ingress and egress translation tables within network devices, col. 4, lines 59-60).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine an ingress interface as taught in Palnati with Liu and Prince in order to facilitate the call set-up procedure.

With regard to claim 4, the combination of Liu and Prince discloses the method of claim 1.

Palnati discloses the network device is associated with an egress interface **(egress) (ingress and egress translation tables within network devices, col. 4, lines 59-60).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine an egress interface as taught in Palnati with Liu and Prince in order to facilitate the call set-up procedure.

With regard to claim 5, the combination of Liu and Prince discloses the method of claim 1.

Palnati discloses the network device is associated with a service provider network **(source of information)** (“‘connection’ or ‘circuit’ which defines communication paths between the source of information within the network”, col. 4, lines 51-52).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine a service provider as taught in Palnati with Liu and Prince in order to have a source of information to facilitate the call set-up procedure.

Allowable Subject Matter

12. Claim 12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

13. Claims 10,11,13,19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Blanche Wong/
Examiner, Art Unit 2619
September 12, 2008

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619